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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,123	10/03/2003	Bernd Klinksiek	Bayer 10261-WCG	2253

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EXAMINER	
MAEWALL, SNIGDHA	

ART UNIT	PAPER NUMBER
1612	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/679,123	KLINKSIEK ET AL.	
	Examiner	Art Unit	
	Snigdha Maewall	1612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-36 and 40-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-36 and 40-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Summary

1. Receipt of Applicants arguments/remarks, amended claims and RCE filed on 10/13/08 is acknowledged.

Claims 16, 20, 24, 26, 34, 40 and 40 and 42 have been amended.

Claims **16-36 and 40-45** are under prosecution.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 16-36 and 40-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 16, 26 and 40 recites the limitation "at least one dispersant, coating material and optionally additives" and the n further claim the whole process of utilizing dispersant, coating material and additives. In the absence of specific components, the structure and function cannot be deduced for the claims. In the absence of specific components, the

claim reads on any/all dispersant, coating material and additives that possibly exist in pharmaceutical art.

The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See, e.g., In re Wilder, 22 USPQ 369, 372-3 (Fed. Cir. 1984). (Holding that a claim was not adequately described because the specification did 'little more than outline goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate.')

Mere indistinct terms (such as dispersant, coating material and additives) used herein), however, may not suffice to meet the written description requirement. This is particularly true when a compound is claimed in purely functional terms. See Univ. of Rochester v. G.D. Searle, 69 USPQ2d 1886 (CAFC 2004) at 1892, stating:

> The appearance of mere indistinct words in a specification or a claim, even an original claim, does not necessarily satisfy that requirement. A description of an anti-inflammatory steroid, i.e., a steroid (a generic structural term) described even in terms of its functioning of lessening inflammation of tissues fails to distinguish any steroid from others having the same activity or function. A description of what a material does, rather than of what it is, usually does not suffice.... The disclosure must allow one skilled in the art to visualize or recognize the identity of the subject matter purportedly described. (Emphasis added).

Conversely, a description of a chemical genus will usually comprise a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus. See Univ. of Calf. V. Eli Lilly, 43 USPQ 2d 1398, 1406 (Fed. Cir. 1997). This is analogous to enablement of a genus under Section 112, ¶ 1, by showing the enablement of a representative number of species within the genus.

A chemical genus can be adequately described if the disclosure presents a sufficient number of representative species that encompass the genus. *If the genus has*

substantial variance, the disclosure must describe a sufficient number of species to reflect the variation within that genus. See MPEP 2163. The MPEP lists factors that can be used to determine if sufficient evidence of possession has been furnished in the disclosure of the Application. These include the level of skill and knowledge in the art, partial structure, physical and/or chemical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function, and the method of making the claimed invention. Disclosure of any *combination of such identifying characteristics that distinguish the claimed invention from other materials* and would lead one of skill in the art to the conclusion that the applicant was in possession of the claimed species is sufficient. MPEP 2163.

Here, the specification does not provide a reasonably representative disclosure of useful [dispersant, coating material and additives] generally, a potentially huge genus inclusive of many different compounds having widely divergent structures and functions. Specifically, the specification discloses only a limited number of species at page [12], and these are not viewed as being reasonably representative of the genus in its claimed scope because no readily apparent combination of identifying characteristics is provided, other than the disclosure of those specific species as examples of the claimed genus.

Applicant has not shown possession of every possible dispersant, coating material and additives in producing pulverulent active substance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 16-36 and 40-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Westesen et al. (US Patent No. 5,885,486) in view of Timothy et al. (Biotechnol. Prog. 200, 16, 402-407).

Westesen et al. discloses an invention relating to the area of administration forms and delivery systems for drugs, vaccines and other bioactive agents. The reference also describes the process of preparing micron and submicron particles of bioactive agents. The process as depicted describes that a solid lipid or bioactive agent or a mixture of solid lipids is melted, stabilizers are added either to the lipid or bioactive agent and to the aqueous phase only depending on their physicochemical characteristics. Stabilizers may also be added or exchanged after homogenization. Drugs or bioactive agents can be melted together with lipid. The aqueous phase is heated to the temperature of the melt before mixing and may contain for example, stabilizers, isotonicity agents, buffering substances, and /or preservatives. The molten compounds are emulsified in an aqueous phase by high pressure homogenization (abstract, column 11 and steps 1-8). Drugs or bioactive agents particularly suitable are listed in column 10, lines 30-60). Ibuprofen and vitamins are also enlisted on the same column. Further in step 8 in

column 11, lines 50-55, it is disclosed that the dispersion medium can be reduced by standard techniques such as freeze drying and the lyophilized powder can also be processed into other pharmaceutical formulations such as tablets etc. The bioactive drugs can be dissolved or crystalline or amorphous or a mixture of these crystallographic states. Role of surfactant is described in example 19 on column 24. Various isotonicity agents such as glycerol or xylitol and sucrose, glucose are disclosed on column 10, lines 10-15. The suspensions and lyophilizates can be used for peroral, buccal, pulmonary etc. depending o n the particle size (see column 14, lines 40-45). The reference further teaches the importance of smaller particle size during drug delivery process (see column 2, lines 10-25). The reference teaches that the drug carrier systems in the micrometer size range are represented as microspheres which are encapsulated (column 3, lines 30-35).

Wetesen et al. do not disclose adding compressible fluid in the supercritical state under pressure to the suspension.

Timothy et al. teaches a method for particle size reduction based on rapid expansion from supercritical fluids, especially CO2. Timothy et al. teaches that the pharmacokinetic properties of both oral and injectable formulations are dependent on the particle size. Small particles are often needed in order to maximize surface are, improve bioavailability and for dissolution requirements. Use of surfactant such as tween 80 is described on page 403 for aiding in the stabilization of drug particles.) also see page 405, second paragraph). Micronization of various drugs were assessed at various temperatures and pressures as depicted on page 404 under the heading

"results and discussion." Timothy et al. further disclose that the goal was to produce aqueous suspensions of water insoluble drugs by the RESAS of CO2 solutions(page 402, last paragraph).

It would have been obvious to the one of ordinary skilled in the art at the time the invention was made to utilize the compressible fluid in the supercritical state under pressure supercritical fluid such as CO2 as disclosed by Timothy et al. into the process disclosed by Wetesen et al. because Wetesen et al. also teaches the preparation of micron and submicron particles consisting of poorly water soluble bioactive agents and their use in drug delivery systems. One skilled in the art would have been motivated to prepare pulverulent active substances by utilizing the process of both Wetesen et al. and Timothy et al. with a reasonable expectation of success.

Response to Arguments

6. Applicant's arguments filed 10/13/08 have been fully considered but they are not persuasive.

Applicant argues that Westesen et al. does not only fail to disclose addition of compressible fluid but also the reference does not teach active substance being dissolved in aqueous phase.

Applicant's arguments are not persuasive because Westesen et al. has not been cited for addition of compressible fluid in supercritical state to the suspension. Secondary reference Timothy et al. has been cited for addition of compressible fluid. Applicants arguments regarding active substance not being added to an aqueous phase is not

persuasive because the primary reference teaches the process of preparing micron and submicron particles of bioactive agents. The process as depicted describes that a solid lipid or bioactive agent or a mixture of solid lipids is melted; stabilizers are added either to the lipid or bioactive agent or to the **aqueous phase only** depending on their physicochemical characteristics. Therefore, the suspension of active agent with an aqueous solution is also disclosed in the prior art in addition to forming emulsion.

Applicant further argues that Westesen's art discloses:

> The active substance is always incorporated into the lipid melt, prior to contacting said mixture with the dispersion medium. Said contacting may be melting together with the lipid or dissolution, solution or dispersion in a lipid-melt (see col. 11, lines 16-20). It is most likely that dissolution or solution is desired due to the correspondent hydrophobic properties of the lipids and the active substances, but in none of these possibilities is the active substance suspended in an aqueous phase.

In response to this argument, the examiner respectfully points out the instant claims do not disclose the nature of the active substance whether hydrophilic or hydrophobic. Purpose for which the active ingredient is added is not material, the fact that the active material has been shown to be added to aqueous phase reads on the claimed invention. Besides, the prior art teaches dispersing the bioactive into the aqueous phase which is same as suspending the active in aqueous phase. It should be noted that the open ended comprising language does not preclude reading any other process step in to the claims. Applicant is looking for the exact steps in the prior art, however, the rejection has been made over the teachings of the combination of prior art. Furthermore, the independent claims 16, 26 and 40 as recited ,do not specify any specific components, let alone specific ingredients such as active substance, dispersant or additives, the claims as recited are very broad.

Applicants argue that with the instant amended claims reciting specific sequence, the instant claims are therefore in allowable condition. Applicants arguments are not persuasive as pointed out earlier the independent claims as recited are very broad and do not specify any specific components.

Applicants statement that the instant "process additionally seeks to minimize an emulsified state of the system to a maximum extend of a few milliseconds (see paragraph [0132], last sentence) and uses a process defined by the existence of suspended particles even before passing the short emulsion step" is not reflected in claims, (although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993), as such the rejection is maintained. Applicants have not provided side by side comparison supported by technical and scientific data of the instant invention with the closest prior art in order to show unexpected results.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Snigdha Maewall whose telephone number is (571)-272-6197. The examiner can normally be reached on Monday to Friday; 8:30 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frederick Krass can be reached on 571-272-0580. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Snigdha Maewall/

Examiner, Art Unit 1612

/Gollamudi S Kishore /

Primary Examiner, Art Unit 1612